

### **AMENDMENTS TO THE CLAIMS**

- At time of the Action: Claims 1-59
- Allowed Claims: Claims 14-18, 33-37, and 50-52
- Cancelled Claims: Claims 2-14, 19, 21-33, 38, 40-50, and 53-59
- Amended Claims: Claims 1, 15-18, 20, 34-37, 39, and 51-52
- After this Response: Claims 1, 15-18, 20, 34-37, 39, and 51-52

The following listing of claims replaces all prior versions and listings of claims in the application.

**1. (Currently Amended)** A method for conducting physical address discovery, facilitating point-to-point communications between hosts of a cluster operating in a cluster mode wherein acceptable messages are addressed to a shared cluster address, the method comprising:

receiving by a target host, an address discovery request initiated by a source host seeking a physical address of the target host, wherein the source host and the target host are both hosts within the same cluster, wherein the target host is distinct from the source host and the target host comprises a network communication protocol-specific layer including an address discovery request handler that operates in the cluster mode; and

generating by the target host, an address discovery response acceptable by the source host operating in the cluster mode, wherein the address discovery response comprises[[:]] a response source physical address field specifying a non-cluster mode physical address of the target host[[:]],wherein the generating comprises:

determining by the target host whether the address discovery request was issued by a source host operating in the cluster mode, wherein the determining comprises:

detecting that the address discovery request includes a request source physical address field specifying the shared cluster address assigned to the cluster, and a request source network communication protocol-specific address field identifying the source host as a host within the cluster;

modifying the request source physical address field within the address discovery request, in accordance with the determining step, by replacing the

shared cluster address with a non-cluster mode physical address of the source host;

passing the address discovery request to the address discovery request handler;

first creating an initial address discovery response, by the address discovery request handler, based upon the modified address discovery request, the address discovery response including:

the shared cluster address within the response source physical address field; and

the non-cluster mode physical address of the source host within a response target physical address field; and

second creating a revised address discovery response by:

first replacing the shared cluster address with the non-cluster mode physical address of the source host within the response source physical address field; and

second replacing the non-cluster mode physical address of the source host with the shared cluster address within the response target physical address field.

## **2.-14. (Canceled)**

**15. (Currently Amended)** The method of claim [[14]] 1 wherein the second creating step is performed by the target host.

**16. (Currently Amended )** The method of claim [[14]] 1 wherein the address discovery request handler maintains an address resolution table including a set of entries pairing network communication protocol-specific addresses with corresponding physical addresses, the method further comprising:

storing, by the address discovery request handler within the address resolution table, an entry including the non-cluster mode physical address and a corresponding network communication protocol-specific address of the source host.

**17. (Currently Amended)** The method of claim [[14]] 1 wherein the network communication protocol-specific layer implements the TCP/IP protocol.

**18. (Currently Amended)** The method of claim [[14]] 1 wherein the address discovery response further includes a response destination field specifying the shared cluster address assigned to the cluster, the method further comprising rendering the address discovery response acceptable by the source host operating in the cluster mode by:

replacing, within the response destination field, the non-cluster mode physical address with the shared cluster address.

**19. (Canceled)**

**20. (Currently Amended)** A computer storage medium comprising computer-executable instructions for conducting physical address discovery, facilitating point-to-point communications between hosts of a cluster operating in a cluster mode wherein acceptable messages are addressed to a shared cluster address, the computer-executable instructions facilitating performing a method comprising:

receiving by a target host within the cluster, an address discovery request, initiated by a source host within the cluster, seeking a physical address of the target host, wherein the target host is distinct from the source host and the target host comprises a network communication protocol-specific layer including an address discovery request handler that operates in the cluster mode; and

generating by the target host, an address discovery response acceptable by the source host operating in the cluster mode, wherein the address discovery response comprises[[:]] a response source physical address field specifying a non-cluster mode physical address of the target host[[:]],wherein the generating comprises:

determining by the target host whether the address discovery request was issued by a source host operating in the cluster mode, wherein the determining comprises:

detecting that the address discovery request includes a request source physical address field specifying the shared cluster address assigned to the cluster and a request source network communication protocol-specific address field identifying the source host as a host within the cluster;

modifying the request source physical address field within the address discovery request, in accordance with the determining step, by replacing the shared cluster address with a non-cluster mode physical address of the source host;

passing, after the replacing step, the address discovery request to the address discovery request handler;

first creating an initial address discovery response, by the address discovery request handler, based upon the modified address discovery request, the address discovery response including:

the shared cluster address within the response source physical address field; and

the non-cluster mode physical address of the source host within a response target physical address field; and

second creating a revised address discovery response by:

first replacing the shared cluster address with the non-cluster mode physical address of the source host within the response source physical address field, and

second replacing the non-cluster mode physical address of the source host with the shared cluster address within the response target physical address field.

**21.-33. (Canceled)**

**34. (Currently Amended)** The computer storage medium of claim ~~[[33]]~~ 20 wherein the second creating step is performed by the target host.

**35. (Currently Amended)** The computer storage medium of claim ~~[[33]]~~ 20 wherein the address discovery request handler maintains an address resolution table including a set of entries pairing network communication protocol-specific addresses with corresponding physical addresses, the method further comprising:

storing, by the address discovery request handler within the address resolution table, an entry including the non-cluster mode physical address and a corresponding network communication protocol-specific address of the source host.

**36. (Currently Amended)** The computer storage medium of claim ~~[[33]]~~ 20 wherein the network communication protocol-specific layer implements the TCP/IP protocol.

**37. (Currently Amended)** The computer storage medium of claim ~~[[33]]~~ 20 wherein the address discovery response further includes a response destination field specifying the shared cluster address assigned to the cluster, the method further comprising:

rendering the address discovery response acceptable by the source host operating in the cluster mode by replacing, within the response destination field, the non-cluster mode physical address with the shared cluster address.

**38. (Canceled)**

**39. (Currently Amended)** A host computer system including physical address discovery components facilitating point-to-point communications between hosts of a cluster operating in a cluster mode wherein acceptable messages are addressed to a shared cluster address, the host computer system comprising:

a network interface for receiving an address discovery request initiated by a source host within the cluster, seeking a physical address of a target host within the cluster;

a transport layer component for carrying out transport-protocol specific processing of network requests, wherein the transport layer component includes an address discovery request handler that operates in the cluster mode; and

intracluster address discovery logic interposed between the network interface and the transport layer component of the host computer system, the intracluster address discovery logic performing the step of:

generating an address discovery response acceptable by the source host operating in the cluster mode and including:

a response source physical address field specifying a non-cluster mode physical address of the target host[[,]];

determining whether the address discovery request was issued by a source host operating in the cluster mode, wherein the determining step performed by the intracluster address discovery logic comprises:



detecting that the address discovery request includes a request source physical address field specifying the shared cluster address assigned to the cluster, and a request source network communication protocol-specific address field identifying a host within the cluster of hosts;

modifying the request source physical address field within the address discovery request, in accordance with the determining step, by replacing the shared cluster address with a non-cluster mode physical address of the source host;

passing the address discovery request to the address discovery request handler;

first creating an initial address discovery response, by the address discovery request handler, based upon the modified address discovery request, the address discovery response including:

the shared cluster address within the response source physical address field; and

the non-cluster mode physical address of the source host within a response target physical address field; and

second creating a revised address discovery response by:

first replacing the shared cluster address with the non-cluster mode physical address of the source host within the response source physical address field, and

second replacing the non-cluster mode physical address of the source host with the shared cluster address within the response target physical address field,

wherein the host computer system is one of the hosts of the cluster operating in the cluster mode.

**40.-50. (Canceled)**

**51. (Currently Amended)** The host computer system of claim ~~[[50]]~~ 39, wherein the address discovery request handler maintains an address resolution table including a set of entries pairing network communication protocol-specific addresses with corresponding physical addresses, and wherein the address discovery request handler stores, within the address resolution table, an entry including the non-cluster mode physical address and a corresponding network communication protocol-specific address of the source host.

**52. (Currently Amended)** The host computer system of claim ~~[[50]]~~ 39 wherein the transport layer component implements the TCP/IP protocol.

**53.-59. (Canceled)**